

35t Cold Electronics Status

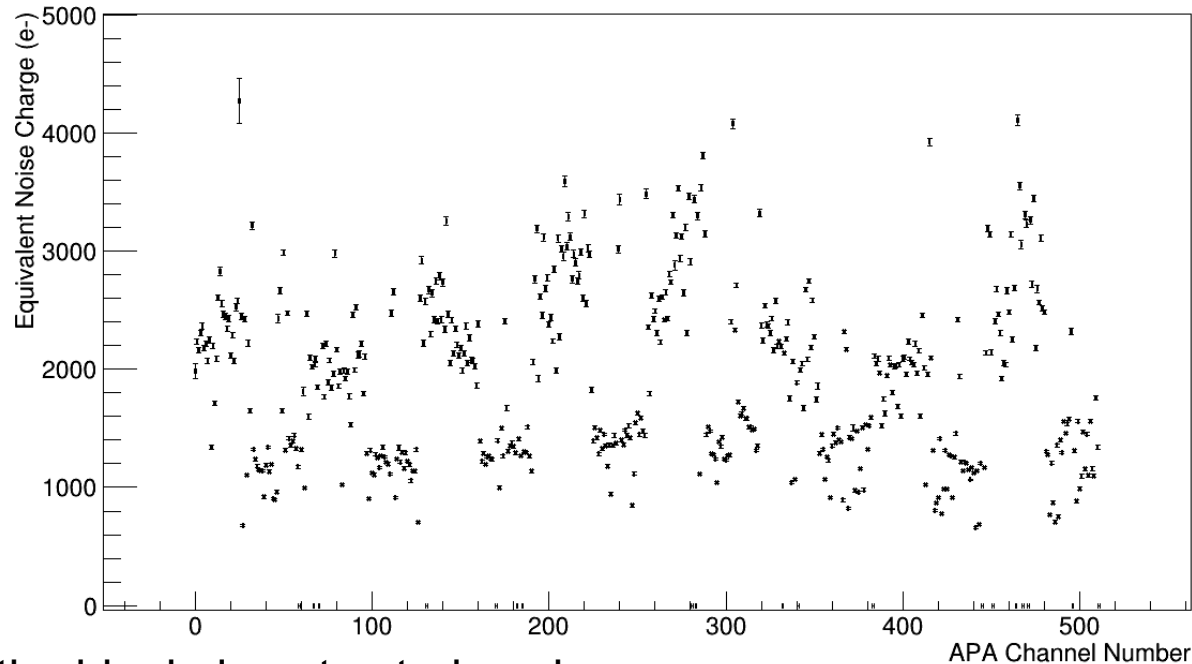
B. Kirby - 35t Meeting - Aug 26, 2015

35t Cold Electronics and Readout

- All 35t FEMBs installed on APAs:
 - APA checkout process nearly complete
 - Cryostat installation at FNAL PC4 in progress
- Commissioning will start very soon:
 - Front end electronics commissioning plan largely determined
 - Automated FEMB gain and noise measurements implemented
 - Refining online monitoring plots
- External calibration module modified, need to evaluate new pulse shape
- Major progress in debugging RCE DAQ by SLAC collaborators
 - Ideally resolve RCEs dropping out during long runs

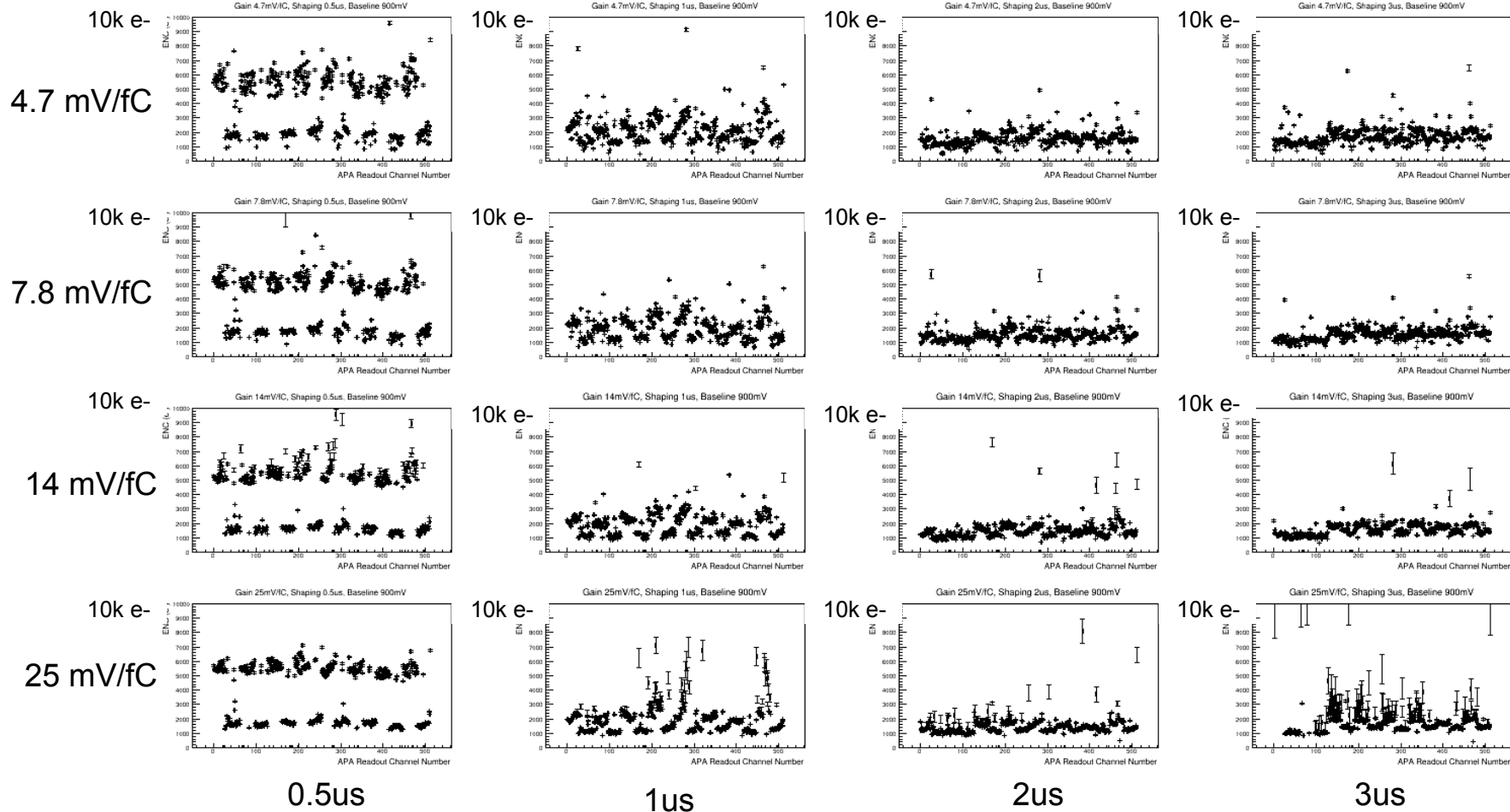
APA Noise Studies at DAB

ENC Vs APA Channel Number

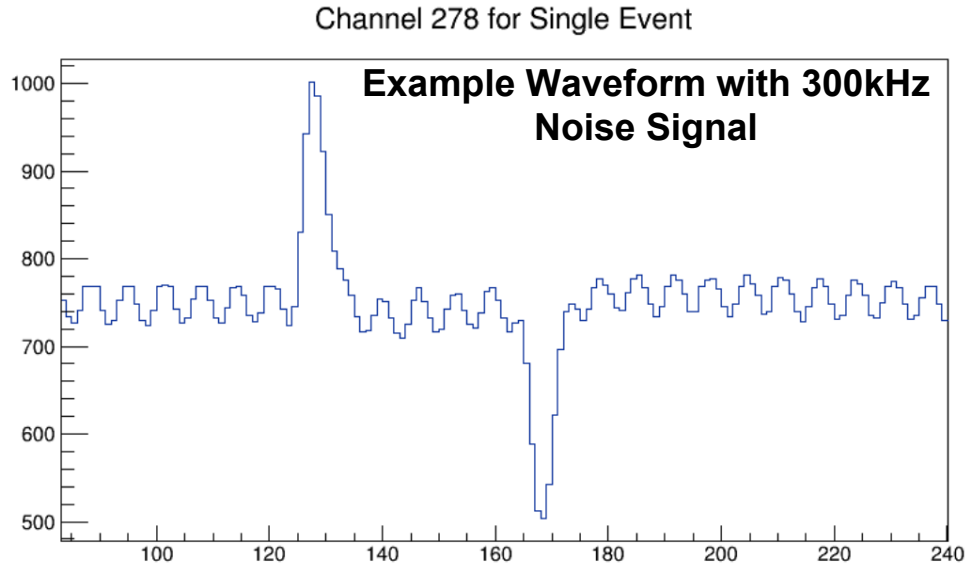
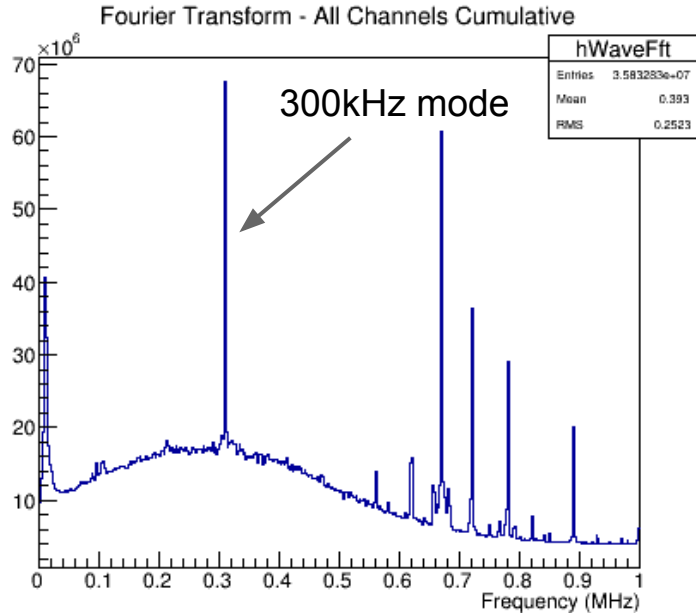


- NOT the ideal place to study noise
- Collection channel noise $\sim 1000e^-$, induction channels are $>2000e^-$ (7.8 mV/fC, shaping time 1 μ s shown here)

35t APA Noise Runs - Vary FE ASIC Settings



Noise Frequency Distribution



- DAB is electrically very noisy, high noise levels in readout is not surprising
 - Induction wires are longer, see more of this ambient noise
- 300kHz mode linked to flange board optical mezzanine card power supply
 - **Completely eliminated after moving to linear supply**

Plans

- Finish testing current APA today
 - DAQ move to PC4 will begin after APA checked out
- Cryostat installation in progress